State of California
Awards for Innovation in Higher Education

Section A. Cover Page

Contact Information for Application Coordinator.
Bob Livingston – Instructor, Business Administration
Cerritos College
11110 Alondra Blvd.
Norwalk, CA 90650
blivingston@cerritos.edu
562/860-2451 x2744

List of Participants.
Cerritos College (fiscal agent)
Northwood University
Lumen Learning
California State University system

Abstract. Cerritos College has extensive experience and great success with the integration of online educational resources (OER) into its courses. This broad adoption of OER has addressed serious issues of program cost and access that frequently result in the attrition of the high- risk students the college serves. Significant gains in student retention, achievement, and completion has inspired the college to broadly adopt this new approach and to take the next innovative step forward: to combine OER with digital learning. With this proposed program we will not only broaden application of OER and digital learning throughout the curriculum, but we will also begin to move "vertically": to create completed Associate Degrees for Transfer. This will be accomplished through the development of master course templates or "shells" to use as the foundation for creating and customizing digital courses.   These master "shells" would be disseminated across the curriculum through the college's Center for Teaching Excellence and will be fully portable and scalable to other campuses or educational systems. The innovation effort we propose supports not only low-cost textbook alternatives and increased on-line educational access, but also dovetails with campus and statewide agendas to compress time to completion. To this end, this proposed innovation will see the development and implementation of fully on-line Associate Degrees for Transfer in selected academic and vocational areas.

Contact Information for Representative of Fiscal Agent.
Bob Livingston – Instructor, Business Administration
Cerritos College
11110 Alondra Blvd.
Norwalk, CA 90650
blivingston@cerritos.edu
562/860-2451 x2744

Assurance and Signature.
"I assure that I have read and support this application. I understand that, if this application is chosen for an award, Cerritos College will serve as the fiscal agent for the award and that the responsibility of the fiscal agent includes distribution of funds to any other participants in the application pursuant to any agreement between the participants. I also understand that, if this application is chosen for an award, the Committee on Awards for Innovation in Higher Education may request submittal of reports or other information."

proxy for J. Fierro

Dr. Jose Fierro
President – Cerritos College

Narrative Responses to Application Items.

Statement of the Problem. Cerritos College is a federally designated Hispanic Serving Institution (HSI). The college enrolled 23,265 students, according to the most recently reported Chancellor's Office statistics (Spring 2016). A breakdown of student demographics from the same period are provided below:

African American	2.6%
American Indian/Alaskan Native	4.5%
Asian	7.2%
Filipino	1.5%
Hispanic	69.1%
Multi-Ethnicity	1.1%
Pacific Islander	.6%
Unknown	7.3%
White Non-Hispanic	5.8%

Eighty-five percent of incoming students are the first in their families to attend college, and 78% of those first-time students are Hispanic. Hispanic students in particular face economic challenges with more than 70% of them receiving need-based financial aid. This is a population that faces many challenges to educational attainment, one of the most significant being financial burden that accompanies the cost of college. Textbooks and other classroom materials in particular represent daunting expenses to many of our students.

This issue goes beyond simple financial hardship. High textbook and materials costs adversely affect student course-taking ability. Students are more likely to withdraw from courses with high textbook costs. These costs lead students to take fewer courses, which in turn leads to increased time to completion. This extra time is the enemy of educational attainment, and there is a direct correlation to excessive completion time and high student attrition. High costs for course materials have the cumulative impact of reducing the number of courses students can take, extending their time to completion, and otherwise hindering them from completing certificates and Associate degrees as well as entering university transfer pathways.

The innovation effort we propose supports not only low-cost textbook alternatives and increased on-line educational access, but also dovetails with campus and statewide agendas to compress time to completion. To this end, this proposed innovation will see the development and implementation of fully on-line Associate Degrees for Transfer in selected academic and vocational areas.

Description of the Innovation. In Fall 2012, as an outgrowth of a federal Trade Adjustment Assistance Community College Career Training (TAACCCT) grant from the U. S. Department of Labor, and as a larger effort to address the challenge of lowering costs for our high-risk student population, Cerritos' Retail Management Program (RMP) team shifted nearly all of its courses to low-cost digital courseware designed using open educational resources (OER) from Lumen Learning. This broad adoption of OER has addressed serious issues of program cost and access that frequently prove insurmountable obstacles to the high- risk students the college serves. Consequently, students were able to take more classes and complete their educational goals (usually a certificate) more quickly. As a result, Cerritos College achieved the following:

- Eight stacked and latticed curriculum, offering streamlined and accelerated Business credentials and college-level instruction as well as mapped short-term awards to associate levels, an approach that results in more efficient course-taking and shorter time to completion;

- New and enhanced on-line educational resources and instructional modalities, including freely accessible, openly licensed documents and media that are useful for teaching, learning, and assessing, as well as for research purposes;

- Newly developed and up-to-date guidance materials deployed through subject matter experts;

- A "high-touch" program environment;

- Clearly defined educational pathways that eliminate extraneous course-taking;

- Technology-rich course content delivery;

- An expansive network of community and industry partners;

- Expanded institutional capacity to capture student academic information to facilitate continuous tracking and timely interventions;

- Expanded institutional capacity to assess attainment of competency-based outcomes through annual review and modification with the goal of continuous improvement;

- Significant increase in retention rates, shifting from 67% to 87-89% in the retail management and business programs since they originally introduced courses designed using OER; and

- Dramatically increased attainment of certificates and degrees by reducing time to completion.

This resounding success of our OER certificate programs has inspired the campus to not only institutionalize its best practices but to expand the model campus-wide, while taking the next innovative step forward: to **combine OER with digital learning.** This will not only broaden its application on campus to various other disciplines (a process already underway but to be greatly accelerated through this award), but also move "vertically", by creating completed and articulated Associate degree pathways leading to university transfer (called Associate Degree for Transfer, or ADT).

This program will see the development of master course templates or "shells" to use as the foundation for creating and customizing digital courses using OER in Lumen Learning's courseware platform. These master "shells" would be disseminated across the curriculum through the college's Center for Teaching Excellence (CTX) and will be fully portable and scalable to other campuses or educational systems.

The college's approach, using Lumen Learning's courseware fits solidly into the relatively new category of "digital courseware." Historically, digital courseware has been provided by traditional publishers using proprietary content that is difficult to truly customize because of copyright limitations. Lumen's courseware innovates by bringing openly-licensed content together with strong learning design, a platform for seamless delivery and customization in the Learning Management System, and solid adoption support for those using its products.

Implementation. The adoption of OER based digital courseware continues to gain momentum at Cerritos, and with the uniting of digital learning and OER, the momentum will increase dramatically. Spearheaded by a cross-functional team, and supported by the Board of Trustees, the tools to use digital courseware across the curriculum is being strongly advocated by the Faculty Senate President. The organizations involved in the implementation are:

Cerritos College	Fiscal agent, site of development and implementation of digital courseware and new OER curriculum.
Northwood University	Four-year educational partner with whom Cerritos will coordinate to complete a Business Bachelor's degree pathway entirely online using digital learning and OER.
Lumen Learning	Provider of software and technical support, and an active participating in project evaluation.
California State University system	Cerritos will coordinate to ensure that all Associate degree pathways align with the existing Associate Degree for Transfer (ADT) agreements with the CSU system.

Faculty expect a high degree of academic freedom to control of the content of their curriculum. Faculty resistance to transferring their courses to a new technological framework has proven the most significant barrier to our past OER efforts. Formerly, such an undertaking has been labor intensive to a degree that makes the prospect unappealing to faculty. But the technological approach we are taking eliminates this. The course digital "shell" templates are easily customizable for faculty and Lumen provides dedicated support for faculty-directed updates. This allows teachers to teach instead of instead of inputting data and uploading course materials. This effort enjoys the support of the college's Faculty Senate President, who has been a strong advocate for the broad application of OER-based digital learning on our campus.

Timeline

Capacity Building – The project team will coordinate with the Division of Academic Affairs and the Faculty Senate to host institution-wide discussions about: broadening application of digital/OER learning throughout the curriculum; development of institution-wide faculty training to disseminate information across the disciplines, including identifying key individuals within each department to implement the new courseware; and creating a "ladder" of these courses that leads to an articulated ADT with the California State University system. *Dates:* Begin in Fall 2017 with campus forums and faculty training development, which will be implemented in the Fall semester and continue as it is folded into the standard professional development program.

Development – Lumen experts will provide support for OER content customization, curriculum alignment, assessment design, and delivery associated with building, editing, and adapting pre-existing materials. The courseware permits great latitude to faculty to incorporate all key competencies required to achieve the desired SLOs. The flexibility of use and the degree of

control that faculty have over the material and formatting makes course planning activities easy to address. Ongoing evaluation using built-in analytics allows for the identification of best practices, and Lumen's OER project's higher education partners serve as a broad foundation from which to disseminate best practices to the educational community. All of this allows more thoughtful and responsive course-building, assessment design, content integration, and regular updates of material per teacher request. *Dates:* Development will begin in Fall 2017, with additional courses being developed as more faculty receive training.

Implementation – Faculty participates in training to introduce them to the courseware and how to use it effectively. Comparable to the process of switching textbooks, faculty reviews course materials and decides how to align the content and learning activities with the course learning outcomes and timeline. This may involve reordering, removing or adding course content; creating or adapting sample assignments and performance assessments; designing a syllabus and course calendar; adapting sample grading rubrics, and so forth. As part of the course configuration process, instructors go through a simple step-by-step process of configuring automated messaging tools, which send individualized messages to students over the course of the term based on how they perform in the course and how they interact with course materials. This enhanced communication provides coaching and encouragement to help students become better learners. According to pilot research, it also creates a stronger sense of caring and interpersonal connection between instructors and their students. Instructors receive regular alerts when the system identifies students who are trying but struggling, so they can offer individualized outreach when and where needed. *Dates:* Implementation could conceivably begin in Spring 2018, but most new courses will be piloted beginning in Fall 2018, as a result of the increased faculty training provided.

Evaluation – The courseware is developed expressly to apply additional research and scientific breakthroughs to the experience of teaching and learning with OER. As students and instructors use courseware, learning data are generated and captured by Lumen Learning to feed a continuous improvement process. Insights from these data drive improvements to the product and the implementation process in order to strengthen student learning. For example, learning data from existing pilot (2015-2016) reveal measurable improvement in student learning when instructors use the courseware's messaging tools. In addition, we will also work with our on-campus research resources to collect and analyze data that supports the Strategic Plan priorities: student completion, degree/certificate attainment, university transfer, retention, and persistence.

 Dates: Evaluation of various components will take place as they are piloted. With faculty development this means Fall 2018. Course piloting, the majority will take place during normal semester evaluation schedules.

Dissemination - A strength of the model we are employing is its portability and scalability. We will disseminate the details of the model, the best practices of implementation, and our project outcomes via number of vehicles. These includes hosting conferences on creating master class shells using open educational resources; developing tutorials in a number of different formats, on the methods used to develop online educational resources; the project website, and published papers in educational journals. *Dates:* Dissemination will begin in Fall 2017 at local conferences. This activity will be ongoing as more courses are piloted, more data is gathered and analyzed to better ascertain the effectiveness of the courseware.

Alignment with Other Efforts.

This effort aligns closely with the Strategic Plan at Cerritos College, which concentrates heavily on improving student completion, reducing cost, and expanding technological options to traditional course-taking.

Our pilot program involving the implementation of OER courses has resulted in exactly the kind of dramatic increases that the college seeks to achieve, including:

- increases in student success,
- improvement in student academic progress,
- improved persistence,
- improved achievement of Student Learning Outcomes,
- improved student engagement,
- improved educational achievement of stated goals (in the case of the pilot, this was one of a number of available certificates),
- improved college accessibility, and
- improved time to completion.

This pilot also support the key elements of the college's Completion Agenda, currently being spearheaded by the President's Office and the Board of Trustees. A similar movement has begun at the state level with new programs encouraging reduced textbook costs to remove the obstacle of high college costs.

Scaling and Replication. The college seeks to develop and enhance a model not just to improve educational access for its own students, but for students state and nationwide. The model and software we use makes this easy. The two software packages that make up the courseware emphasize ease of use and portability.

Cerritos College and Lumen are mega sponsors of California Business Education Association hosting a three-day workshop in Southern California on creating master class shells using open educational resources. A similar conference will be held over the next two years, including Northern California to share best practices and methods of implementing our model, and scaling it to a variety of topics and campus/districts. Additional funding would allow for more conferences to take place throughout the state.

Currently, monthly workshops are being held at the Cerritos College CTX about developing OER content. These workshops will be adapted to OER/digital topics and used as a foundation to scale campus wide. In addition, these workshops will be offered in an online format and offered to campuses throughout the state to help more broadly scale the model statewide.

Lumen has also created a website for Cerritos' model through which details of the model and our implementation plan will be readily available to campuses wishing to learn more about the Lumen courseware and its application in a community college setting. The URL for this site is: http://lumenlearning.com/cerritoscollege/

Evidence for Success. OER is a great "field leveler" for low-income students, for whom the cost of commercial textbooks is often prohibitive. Application of OER-based digital courseware at Cerritos College has resulted in savings of 95% on course costs vs. prior course delivery models, and the number of certificates as increased more than 266%. This has been a great boon to our students, many of whom are at-risk and low-income. As more and more OER textbooks and materials have been adopted, student retention and completions have continued to increase:

Fall/Spring	2008-09	67.4% (Pre-OER)
Fall/Spring	2009-10	75.2%
Fall/Spring	2013-14	80.3%
Fall/Spring	2014-15	83.4%
Spring	2016	86.7%

Current research documents that students in these courses perform "as well or better than students whose faculty assigned commercial textbooks." Lumen developed this courseware to apply scientific breakthroughs to OER instruction, and the courseware supports advanced functionality for customizing content to learning outcomes and instructional approaches. Courses are delivered in a WordPress-based platform with intuitive authoring tools allowing instructors to easily edit course content. Instructors report the instructional implementation is comparable to or easier than implementing traditional courses. They also report that messaging tools typically save time identifying and offering assistance to students who need help. Staff members providing technical support for the program find the technical implementation is also quite simple due to Lumen Learning's well-designed approach to courseware-LMS integration.

Cerritos College's work in the area of online learning has begun to achieve national notice. In 2016, the college was awarded an Online Learning Consortium's (OLC) Digital Learning Innovation Award for its Business Administration Department's Open Education Resources (OER) project. Cerritos College was one of three institutions and five faculty-led teams selected from among 106 submissions in this first year of the OLC Digital Learning Innovation Award competition. The award includes $100,000 which is dedicated to enhancing digital learning and open educational resources, and reducing the financial barriers faced by our students.

Assessing Success. The courseware is designed expressly to apply additional research and scientific breakthroughs to the experience of teaching and learning with OER. The software incorporates mastery learning in the assessment strategy, strong alignment of all learning activities to explicit learning outcomes, and frequent opportunities for assessment and feedback to students and instructors about student performance.

As students and instructors use the courseware, learning data are generated and captured by Lumen Learning to feed a continuous improvement process. Insights from these data drive improvements to both the product and the implementation process in order to strengthen student learning. For example data from the first year of our pilot reveal measurable improvement in student learning when instructors use the courseware's messaging tools. Lumen is using this finding to enhance the messaging toolset itself, as well as training/orientation materials for students and instructors, and recommended best practices for using the courseware. Where student performance data indicate many learners are struggling on a similar part of the course, course designers evaluate the relevant course content to understand what is happening and how to improve learning, either by adjusting content, adding a video or simulation, or other modifications.

In addition, the college will work with its own internal research capacities to collect and analyze data on student completion, degree/certificate attainment, university transfer, retention, and persistence.

Commitment to Support and Sustain This Innovation. Cerritos College's Board has recognized the importance of this work, and attached a small fee ($5-20) to these courses, which replaces the cost of expensive textbooks. This results in significant cost savings to students, who pay the small course fee rather than commercial textbook costs that average $100-150 or more. The fee ensures ongoing support to sustain the program. After encountering difficulties with other attempts to sustain this new approach to providing course content, we have found that this approach a) has not represented a financial burden to our students, b) successfully recovers costs and c) presents no financial burden to the college. This will make it possible to sustain the expansion of the program across the curriculum without incurring prohibitive costs to any of its participants.

In addition, the project will be further sustained by strong and ongoing partnership with Lumen Learning, who has been a generous and productive for many years, and who has played a major role in the college's continuing success with online education and digital learning.

This effort is also strongly supported by Cerritos College, which has identified current OER efforts is key to meeting the goals for increased student success outlined in its Strategic Plan. This is further reflected in the strong support received for this project from the Faculty Senate President, the Division of Academic Affairs, the President's Office, and the Board of Trustees.